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SPECIFICATION

INTERLABIAL PAD

Cross-reference to Related Applications

This application is a Continuation of International Application No.

Background of the Invention

Technical Field

The present invention relates to an interlabial pad which can be worn closely fitted into between the labia.

Background Art

Conventionally, a sanitary napkin and a tampon are used generally as sanitary products for the female. Here, there have been great efforts to prevent the leak of blood from gap caused by poor adhesion near the ostium vaginae as for the sanitary napkin. Moreover, as for the tampon, there have been great efforts for relieving the foreign feeling and the discomfort when wearing it and intervaginal fixing trouble due to the nature of the product.

Under such situation, a sanitary product of an interlabial pad has attracted people as a sanitary product featured between the sanitary napkin and the tampon in recent years.

On the other hand, Japan Utility Model Hei 5-18523 (see Fig. 25, which corresponds to Fig. 1 in this Specification) discloses a sanitary napkin, in which an area projected from other area is provided by collectively providing an absorbent body in the central portion of the surface which is brought into contact with the body of a wearer as the product improving the contact state between the sanitary napkin and the body. In the configuration of the sanitary napkin, the projected area is inserted between the labia so that the contact state is improved compared to an ordinal sanitary napkin.

However, in the napkin as described, it is difficult to bring the projected area of

the sanitary napkin to a predetermined position. In other words, it is necessary for the wearer to lead skillfully the projected area of the improved sanitary napkin as described above to the predetermined position between the labia by an action of wearing an underwear since the sanitary napkin is fixed to the underwear whereby the napkin is fitted to a body by bringing up the fixed napkin together with the underwear. While wearing the underwear, leading the projected area of the sanitary napkin to the predetermined position is indirect from wearing so that it is more difficult to control it and less precise to put the napkin on the right spot. Also, the projected area is formed by increasing the thickness of the absorbent body, which may cause the wearer to have a strong foreign feeling depending on the thickness.

Although the projected area like that in the example of the related art is not provided, the above-described interlabial pad can obtain the same contact state as the related art may have because of the nature of the product, which is to insert the product between the labia.

However, the interlabial pad is to be put between the labia where is hard to be viewed so that it is not easy to wear it. In addition, if the interlabial pad is not put onto the right position, a great deal of blood leak may cause damages since it is smaller than a sanitary napkin.

Furthermore, the interlabial pad is directly fitted between the labia so that the contact state with the body is easily influenced by the shape of the labia of the wearer. Therefore, it is necessary that the pad be appropriately fitted to any individuals of difference.

The present invention has been designed to overcome the foregoing problems. An object of the present invention is to provide an interlabial pad which can be worn with close contact state by any wearer who has different shapes in her labia, in particular, deep or shallow labia and which has a configuration so as to achieve sure and sanitary wear.

Summary of the Invention

In order to solve the foregoing problems, an interlabial pad according to the present invention is provided with a finger insertion opening so that [[it]] the pad can be fitted by using the sensitive finger cushion of a finger. Further, the pad is provided with

the body, is so flat that the surface cannot be closely fitted between the labia because of their concave shape. Therefore, it is possible to have a gap between the labia surface and the interlabial pad such that liquid leakage through the gap may occur. Also, since the sheet body of a conventional interlabial pad is a single structure, it may not have enough absorbing property.

However, in the present invention, the main sheet body facing the body side has a long convex area, which can be inserted between the labia. Therefore, a gap between the labia surface and the interlabial pad can be effectively decreased. Furthermore, the sheet body has a dual structure so that the blood absorbing capacity is improved.

[[(2)]] In an [[another]] implementation of an interlabial pad according to the present invention, the main sheet body and the sub-sheet body are directly bonded at each adjacent peripheral edge, and are not directly bonded over an area extending from an inner side of the peripheral edge [[to]] toward inside of the main sheet and sub-sheet bodies.

Accordingly, the main sheet body and the sub-sheet body are separated in the middle area so that one of the sheet bodies is not deformed in a similar shape when the other is deformed. In other words, with this structure, deformation of one sheet body [[is]] does not affect to a shape of the other sheet body.

Here, since both sheet bodies are bonded at the peripheral edges, there may be deformation created due to the bonded state. Specifically, if a wearer having [[the]] labia of a depth more than the height of the long convex area, the long convex area and portions of the main sheet body facing the body side, which surrounds the long convex area, together form a long convex area with a height sufficient to cover the depth of the labia of the wearer when inserted between the labia. Only the peripheral edge of the sub-sheet body facing the garment side which is bonded with the main sheet body is pulled to the body side so that the sub-sheet body as a whole becomes a convex shape facing the opposite side from the body side. Therefore, the sub-sheet body is not to be inserted between the labia.

As described above, according to an implementation of the present invention, even if the original height of the long convex area is insufficient for the depth of the labia, the interlabial pad does not give a foreign feeling to the wearer since only the main sheet

body thickness is inserted between the labia.

If a wearer has labia [of] having a depth less than the height of the long convex area, a part of the long convex area formed in the main sheet body is inserted between the labia [but] while the surrounding area of the long convex area is not inserted between the labia. Hence, the peripheral edge of the sub-sheet body is not pulled towards the body side. Therefore, the sub-sheet body remains almost in the original shape when the interlabial pad is worn.

Here, the term "peripheral edge" as used in this specification [is] broadly [referred] refers to an area where the main sheet body and the sub-sheet body are bonded. Each sheet body has a greater [more] degree of deformation capability since more area of the main sheet body and sub-sheet body may be separable as the "peripheral edge" is positioned closer to the outer periphery of each sheet body.

In the lateral direction of the interlabial pad according to the present invention, extended areas are provided around the bottom of the long convex area. The extended areas are bent to cover the pudenda and positioned outside of it when the interlabial pad is worn. With this structure, the above-described extended areas positioned to face the ostium vagina perpendicularly function [functions] as a blocking wall even if a large quantity of menstrual blood leakage in the lateral direction occurs. In addition, boundary areas between the long convex area and the extended areas [make] form bent portions to sandwich the pudenda when the interlabial pad is worn and to work as [as] a moat to receive menstrual blood so as to prevent menstrual blood leakage to the outside even in the case that the long convex area cannot absorb all menstrual blood. It is preferable that the extended areas are substantially flat so as to perform effectively a function to cover the pudenda.

Brief Description of the Drawings

Fig. 1 is a schematic perspective view showing the top face (body side surface) of an interlabial pad according to the embodiment;

Fig. 2 is a schematic perspective view showing the bottom face (opposite side surface to body) of the interlabial pad according to the embodiment;

Figs. 3(A) and (B) illustrate the interlabial pad according to the embodiment to

which a plurality of mini sheet pieces are attached;

Fig. 4 is a cross section of the interlabial pad according to the embodiment taken along the line I - I shown in Fig. 1;

Fig. 5 is an explanatory illustration for describing a long convex area of the interlabial pad according to the embodiment;

Fig. 6 is an explanatory illustration for describing that the lateral cross sectional areas of the hollows on both edges of the long convex area are different;

Fig. 7 is an explanatory illustration for describing the whole girth inside a second finger insertion opening of the mini-sheet attached to the interlabial pad according to the embodiment;

Fig. 8 is an illustration showing the state where the mini sheet piece attached on the interlabial pad according to the embodiment has a length of 10% or more in the longitudinal direction;

Figs. 9 (A)-(C) illustrate the unbonded position in the back surface side of the mini sheet piece attached on the interlabial pad according to the embodiment;

Figs. 10(A)-(D) illustrate cross-sectional drawings of the attachment position of the mini-sheet on the interlabial pad according to the embodiment;

Fig. 11 is an explanatory illustration for describing the state when inserting the forefinger from the first finger insertion opening to the hollow space at the time of using the interlabial pad according to the embodiment;

Fig. 12 is an explanatory illustration for describing the state when inserting the forefinger to the second finger insertion opening at the time of using the interlabial pad according to the embodiment;

Figs. 13(A)-(B) illustrate that the first finger insertion opening and the second finger insertion opening face towards the same direction;

Fig. 14 is an illustration showing the state when wearing the interlabial pad between the labia according to the embodiment;

Fig. 15 is a front cross section showing the state of the mini sheet piece after wearing the interlabial pad according to the embodiment;

Fig. 16 is an explanatory illustration showing the state when removing the interlabial pad by pulling the mini sheet piece according to the embodiment;

Figs. 17(A)-(B) illustrate a cross section showing the wearing state of the interlabial pad having a ready-made projection;

Fig. 18 is a cross section showing the state when the interlabial pad according to the embodiment is used by a wearer with a short labia depth;

Fig. 19 is a cross section showing the state when the interlabial pad according to the embodiment is used by a wearer with a long labia depth;

Fig. 20 is an illustration showing the state of experiment on measurement of separation force of an adhesive;

Fig. 21 is an illustration showing the state of experiment on measurement of shearing strength of the adhesive;

Figs. 22(A)-(B) illustrate the state where the interlabial pad according to the embodiment is folded and wrapped individually;

Figs. 23(A)-(B) illustrate the state where the interlabial pad according to the embodiment is individually wrapped in a wrapping container to which a character is applied near its opening section;

Figs. 24(A)-(B) illustrate the state where the interlabial pad according to the embodiment is used together with a sanitary napkin;

Fig. 25 is an illustration showing an example of the state of a sanitary napkin of the related art having a ready-made projection;

Fig. 26 is an illustration showing an example of the state of a incontinence support pad of the related art having a finger insertion opening; [[and]]

Fig. 27 is an illustration for describing an example of the state of finger insertion in the incontinence support pad of the related art having the finger insertion opening; and [[.]]

Fig. 28 is an illustration for describing a size of the interlabial pad along the lateral direction.

Detailed Description of the Invention

As described in the Summary of the Invention, in an interlabial pad configured in accordance with the present invention, blood leakage is remarkably reduced. Because the long convex area provided on the body side surface of the main sheet body of the interlabial pad is fitted closely between the labia, the interlabial pad is tightly fixed to the

body of the wearer thereby preventing the whole interlabial pad from falling off the body.

With respect to pad fall-off, the contact state may be further improved by applying an adhesive agent beforehand to either or both the body side surface of the surface side sheet of the main sheet body and the body side surface of the surface side sheet of the sub-sheet body.

When the main sheet body and the sub-sheet body are bonded, it is preferable to provide the bonding area in an area other than the area where the mini sheet piece and the sub-sheet body are bonded. Thereby, for example, excessive stiffness around the peripheral edge of the interlabial pad can be prevented so that the interlabial pad maintains the flexibility to make a preferable wear feeling.

According to still another implementation of an interlabial pad, the main sheet body and the sub-sheet body are bonded to each other at each of the longitudinal side edges of the sheet bodies, respectively. However, at least one of the sleeve portions of the main sheet body or the sub-sheet body is not closed by bonding in the lateral direction to provide a sleeve opening to form a finger insertion opening (see, e.g., Fig. 11) between the main sheet body and the sub-sheet body where a finger can be inserted.

Since only left and right side edges of the main sheet body and the sub-sheet body are bonded to each other, respectively, in the longitudinal direction, a long hollow space is formed between the main sheet body and the sub-sheet body under the long convex area formed on the main sheet body. This long hollow space provides a finger insertion space where a finger can be inserted.

When both sleeve portions at two ends of the main sheet body and the sub-sheet body in the longitudinal direction are not closed by bonding in the lateral direction, a space for a finger insertion forms a through hole (like a tunnel). When one of the sleeve portions is closed by bonding, the space for the finger insertion forms a cave-like space with a closed end.

In an implementation of the present invention, a "side portion" of the main sheet body or the sub-sheet body in the longitudinal direction is intended to include not only the area corresponding to the peripheral edge of the interlabial pad, but also additional area surrounding the peripheral edge where the main sheet body and the sub-sheet body can be bonded.

the garment side, and the mini sheet piece forms a finger insertion opening between the back side sheet and the mini sheet piece. Thus, the first finger insertion opening and a first finger insertion space connected thereto are formed between the main sheet body and the sub-sheet body, and the second finger insertion opening and a second finger insertion space connected thereto are formed between the sub-sheet body and the mini sheet piece. A wearer having labia of shallow depth can insert her finger into the first finger insertion opening towards the first finger insertion space, and, while she makes her finger cushion touch the opposite side face from the body side face of the back surface side sheet of the main sheet body, lead the long convex area between the labia so that a part of the long convex area is fitted between the labia.

On the other hand, a wearer having labia of deeper depth can insert her finger into the second finger insertion opening toward the second finger insertion space, and, while she makes her finger cushion touch the opposite side face from the body side face of the back surface side sheet of the sub-sheet body, properly lead the long convex area between the labia so that the entire long convex area is fitted between the labia.

As described above, the interlabial pad according to the present invention has two kinds of finger insertion openings so that the wearer can provide the interlabial pad suitable for her own labia depth by selecting an appropriate one of the two finger insertion openings. As a result, a manufacture does not have to make various types of interlabial pads corresponding to individual differences in the labia depth.

According to an implementation of an interlabial pad according to the present invention, the long convex area includes a bent portion formed by bending the main sheet body. This long convex area can be easily deformed by an external pressure.

Alternatively, if a ready-made projection is simply provided on the body side face of the interlabial pad, the projection may not necessarily fit all wearers as a result of individual differences in the shape of their labia. For example, if the labia depth of the wearer is more than the height of the projection, the projection can fill only a portion of the inside of the labia thereby leaving a space between the top of the projection and the ostium vaginae. On the other hand, if the labia depth of the wearer is less than the height of the projection, the whole projection cannot be inserted between the labia. In this case, if a projection with an unnecessary thickness is also to be inserted between the labia, a

incontinence. Since both ostium vaginae where the menstrual blood is discharged and urethral meatus where urine is discharged are located between labia, the interlabial pad of the present invention may be used between labia to absorb urine, and in particular for a light incontinence.

According to an implementation of an interlabial pad of the present invention, the interlabial pad may comprise a vaginal-discharge interlabial pad for absorbing vaginal discharge. Since the pad can absorb the vaginal discharge in order to decrease the wearer's discomfort, it is useful for the user who is not menstruating.

According to an implementation of an interlabial pad of the present invention, a wrapping body includes a wrapping container containing the interlabial pad according to the present invention, where the interlabial pad is contained in the wrapping container for individual wrapping.

According to another implementation of the present invention, each interlabial pad may be wrapped individually so that an individually-wrapped interlabial pad can be carried independently for use. Hence, as contrasted with a plurality of the interlabial pads are wrapped in the same wrapping container, individual wrapping makes it cleaner and more convenient to handle each pad.

A wrapping body according to the present invention includes a wrapping container for the interlabial pad in which the interlabial pad is contained for individual wrapping in an orthogonal direction to the wrapping container.

According to another implementation of the present invention, the interlabial pad is wrapped without being aligned to the wrapping container. Therefore, the wrapping body is formed so that the first finger insertion opening formed between the main sheet body and the sub-sheet body and the second finger insertion opening formed by the mini sheet piece are to be opened towards the wearer when the wearer opens the wrapping container. Therefore, the wearer's opening direction and finger insertion direction can be made in the same direction so that the wearer can insert the finger easily.

Furthermore, by changing the folding state of the interlabial pad to be wrapped or by indicating the opening direction through drawing a design or character, the wearer can easily select a finger insertion opening according to her own labia depth even if the interlabial pad is individually wrapped according to the present invention.

14 are bonded to each other at a bonding area 17 [[in]] of the peripheral edge 65 except at the sleeve portion 14a of the mini sheet piece 14. An inner space from the peripheral edge 65 is not closed by bonding. Therefore, a finger insertion opening 19B, into which a finger can be inserted, [[into]] and a hollow part 7, formed extendingly from the finger insertion opening 19B are formed between the opposite side face 62a from the body side face of the back side sheet 62 and the mini sheet piece 14. It is possible to provide a plurality of mini sheet pieces 14. In this case, the number of the bonding areas 17 on left- and right-hand sides increases on the back side sheet 62 in the longitudinal direction according to the number of the pieces. For example, if there are two mini sheet pieces 14, two bonding areas are to be provided on each side.

As described, in the case where a plurality of the mini sheet pieces 14 are provided, it is not necessary for all the mini sheet pieces 14 to be in the same shape as shown in Fig. 3(A). For example, as shown in Fig. 3(B), each of the mini sheet pieces 14 may be in a different shape. Thereby, it can prevent blood from sticking to the finger and the amount of materials used for the mini sheet piece 14 can be decreased.

[Long Convex Area]

Next, the shape of the long convex area 3 according to the embodiment will be described. Fig. 5 is an explanatory illustration for describing the long convex area 3 of the interlabial pad 1 according to the embodiment. Fig. 6 is an explanatory illustration for describing that the lateral cross sectional areas of the hollow part at both ends of the long convex area 3 of the interlabial pad 1 according to the embodiment are different.

As shown in Fig. 5, the long convex area 3 forming a first finger insertion opening 19A is formed in such a manner that the length of the top 3a is shorter than that of the bottom 3b in the longitudinal direction. Hence, in the finger insertion opening 19A of the long convex area 3, the edges on both sides are formed to be sloping from the bottom towards the top. Therefore, a wearer can insert the finger inside the finger insertion opening 19A without an interruption by the edges on both sides and pass through under the top 3a into the hollow part 5. Having the short top 3a means a decrease in the contact area of the finger cushion of inserted finger. In other words, the friction drag generated between the finger and the inner wall of the long convex area 3 is to be decreased when pulling out the finger from the hollow part 5 after wearing the interlabial

pad 1 between the labia. As a result, it can drastically decrease the position shift of the interlabial pad 1 after wearing.

Also, the finger insertion opening 19A is substantially triangular and the lateral cross sectional area of the hollow part 5 continued therefrom in the lateral direction is 1 cm² or more. With this structure, the finger insertion opening 19A can be maintained to be wide-open to some extent.

The lateral cross sectional area of the long convex area 3 in the lateral direction, as shown in Fig. 6, is formed in such a manner that one of the end 5b from the other end 5a becomes sub-continuously smaller in the longitudinal direction. With this structure, the shape of the finger in which the lateral cross sectional area becomes smaller towards the fingertip fit to the shape of the hollow part 5. Therefore, the fingertip can be easily kept in contact with the opposite side surface to the body 12a (see Fig. 4) of the back side sheet 12 of the main sheet body 2.

[Mini Sheet Piece]

Next, the attachment state of the mini sheet piece 14 will be described. In the embodiment, as shown in Fig. 2, the mini sheet piece 14 is bonded with the back side sheet 62 by the bonding area 17 in the outer edge of the back side sheet 62 and the area from the outer edge to the inside is not bonded. Hence, the mini sheet piece 14 is attached over the area from one side of the back side sheet 62 to the other side thereby forming a hollow part 7 to be a second finger insertion space over the area from one side to the other side.

In the embodiment, one of the sleeve portions 14b of the mini sheet piece is bonded with the back side sheet 62 in the lateral direction. However, it can be also prepared unbonded. In this case, the above-described hollow part 7 becomes a elongated space with both open ends (like a tunnel).

In the interlabial pad 1 according to the embodiment, the mini sheet piece 14 is attached so that the finger insertion opening 19B has an aperture large enough for the fingerbreadth in the direction of the finger nail width. Thereby, the flat-shaped fingertip may be inserted and its flat face may contact the sheet surface without being tilted against the sheet surface. In this respect, compared to an incontinence support pad of the related

art (JP Patent Hei 6-506368), the easiness of finger insertion is remarkably improved. In other words, in the incontinence support pad of the related art, a finger opening 70 (code 76 in the above-described Application) is closed (see Fig. 26, which corresponds to Fig. 20 in the above-described Application) in the normal state. Therefore, first, a wearer inserts a finger in the direction at a right angle to the incontinence support pad (see Fig. 27, which corresponds to Fig. 22 in the above-described Application) and then turns the finger so that the finger cushion can be faced to the incontinence support pad side.

On the contrary, in the interlabial pad 1 according to the embodiment, unlike the incontinence support pad of the related art in which the aperture of the fingerbreadth is secondarily formed in the direction of the surface of the back side sheet, the finger insertion opening 19B which is suitable for finger insertion is primarily formed so as to be able to insert the finger naturally. Therefore, the wearer of the interlabial pad 1 can specify the direction of the finger insertion. As a result, the finger cushion naturally detects the wearing point so that precise wearing of the pad between the labia can be more easily achieved.

Fig. 7 is a sectional cross section of a part of the interlabial pad 1 in the lateral direction taken out from the interlabial pad 1 for specifically describing the whole girth inside the second finger insertion opening 19B". In Fig. 7, the part unnecessary for describing the length of "the whole girth inside the second finger insertion opening 19B" is shown by an alternate long and short dash line. "The whole girth inside the second finger insertion opening 19B" is a distance denoted by "L" in Fig. 7.

The whole girth inside the above-described second finger insertion opening 19B is preferable to be 30 to 120 mm, and more preferable to be 40 to 80 mm. When the whole girth inside the above-described second finger insertion opening 19B is shorter than 30 mm, the second finger insertion opening itself becomes small causing a difficulty in putting the finger in and out. On the other hand, when it is longer than 120 mm, the interlabial pad 1 can not be fixed to the finger. Therefore, it becomes harder for the finger cushion to be surely in contact with the sheet surface, which causes a problem when wearing. Accordingly, the length "L" in the embodiment is about 40 mm.

Fig. 8 is an illustration showing the state where the mini sheet piece 14 attached on the interlabial pad 1 according to the embodiment has a length of 10% or more in the

be easily transmitted from the body face side to the garment face side resulting in the improvement of the absorbing and holding capacity. Furthermore, by providing a mesh spun lace nonwoven fabric of rayon with 1.1 to 4.4 dtex fineness and 25 to 51 mm fiber length by a specific weight per unit area of 15 to 40 g/m², the liquid transmitted from the body face side can be dispersed by the mesh spun lace to be induced to almost all over the region of the pulp layer. Therefore, more liquid can be effectively absorbed.

The material used for the back side sheet 12 of the main sheet body 2 and the back side sheet 62 of the sub-sheet body 6 are not specifically limited as long as it has a sheet-type structure such as a fabric, nonwoven fabric, or a plastic. However, examples of an impermeable material are an impermeable film mainly made of PE, PP or the like, a breathing resin film, and a material in which a breathing resin film is bonded to the back side of a nonwoven fabric such as a spun bond or spun lace on which water-repellent processing is performed. Considering the degree of softness by which the wear feeling is not influenced, for example, a film obtained by a specific weight per unit area of 15 to 30 g/m² mainly using LDPE (low density polyethylene) is used.

By preparing the back side sheet 62 of the above-described sub-sheet body 6 using an impermeable material, blood held in the absorbent body 63 can be prevented from leaking out. Also, by preparing it using a wet permeable material, stuffiness can be decreased when wearing. Thereby, discomfort felt by the wearers can be decreased when wearing. It is more preferable to reduce the contact ratio to decrease the friction drag value by embossing the above-described film to provide convex-shaped projections in order to, when the pad is worn between the labia, decrease the risk of the interlabial pad from being fallen off from the labia due to the high friction caused by the contact between the impermeable sheets, or with a pad used together, an underwear or the like.

It is preferable to select the material used for the mini sheet piece 14 considering the strength of the material so that it is not damaged when a finger is inserted. It is possible to select with no limitation a single material or the laminated material from the group comprising a nonwoven sheet, an elastic dilation nonwoven fabric, a film, a foam film, an elastic dilation film, a foam sheet, a tissue paper, and the like. A specific example is a film of 15 to 30 .mu.m thickness having an LDPE resin as the main component. Also, the mini sheet piece 14 can be prepared to have the tone of color,

design, chroma which are different from those of the back side sheet 62 of the interlabial pad 1 by coloring or printing a design or the like in order for the wearer to be able to easily discriminate the mini sheet piece 14.

In order to effectively use the interlabial pad 1 according to the present invention, it is also effective to prepare the above-described mini sheet piece 14 to have a characteristic of stretching or elastic dilation in the lateral direction of the back side sheet 12 regardless of the finger size of the wearer.

In order for the mini sheet piece 14 to have a stretching characteristic, a stretching spun bond nonwoven fabric can be used in which the stress is 0.1 to 0.5 N/25 mm at the time of 5% stretching when being stretched at a constant speed by a stretching speed of 100 m/minute with a grip interval of 100 mm.

Also, in order for the mini sheet piece 14 to have an elastic dilation characteristic, a fiber sheet or film sheet using thermoplastic elastomer resin may be used. Also, the elastic dilation material such as the thermoplastic elastomer resin or natural rubber may be used alone or may be combined with a non-elastic dilation material to be used.

The interlabial pad 1 of the present invention can be formed of a biodegradable material, a water dispersible material, a water soluble material, or any combination of these materials. Thereby, the interlabial pad 1 after being used is to be naturally decomposed as time goes by or actively. Therefore, it can be flushed down to a toilet so that discard of the used interlabial pad 1 can be performed easily and cleanly. In other words, the wearer, when discarding the interlabial pad 1, simply goes to a toilet and open the leg towards the toilet bowl to drop the interlabial pad 1 into the toilet bowl. Hence, there is no need for the wearer to be bothered going through a complicated action such as discarding the used product using hands. In addition, there is an advantage that trashes left in the toilet can be decreased.

Furthermore, by preparing the wrapping container for individually wrapping the interlabial pad 1 according to the present invention by a biodegradable material and/or a water soluble material and/or water dispersible material, the wrapping container can be also flushed down to the toilet. Thereby, the wearer can be freed from the trouble of discarding the wrapping container and trashes in the toilet can be further decreased at the same time.

water dispersible material are a compound material obtained by laminating tissue with a specific weight per unit area of 15 to 40 g/m² and polyvinyl alcohol with a specific weight per unit area of 20 to 50 g/m² and applying silicone of 0.5 to 1 .mu.m on the polyvinyl alcohol side, a spun bond nonwoven fabric, etc. prepared with a specific weight per unit area of 15 to 40 g/m² mainly using poly lactic acid fiber.

[Size]

The length of the main sheet body 2 in the lateral direction on the appearance is preferable to be 10 to 60 mm, and more preferable to be 20 to 40 mm. When the length in the lateral direction is longer than 60 mm, the area which is not inserted between the labia is rubbed against the femoral region or the like of the wearer and the friction generated thereby exceeds the holding strength between the both labia so that the interlabial pad may fall off. Also, when the length in the lateral direction is shorter than 10 mm, the area which can be inserted between the labia becomes small thereby reducing the contact area with the inner face of the labia. Thereby, there generates a risk of the interlabial pad being fallen off.

The above-described "appearance" means the distance between two points with the shortest length (V in Fig. 28). This is to carefully define the length since, in the manufacturing step, there may be a case where the length between the two points in a concave and convex shape is taken as the actual length (W in Fig. 28), that is, the distance between the two points in the state in which the concave and convex shape are unfolded to be flat.

On the other hand, the length of the main sheet body 2 in the longitudinal direction is preferable to be 50 to 150 mm, and more preferable to be 80 to 120 mm. When the length in the longitudinal direction is longer than 150 mm, friction generated by the substantial flat area 4 which is not inserted between the labia being rubbed against the underwear or a sanitary napkin exceeds the holding strength of the labia itself so that the interlabial pad 1 may fall off. Also, when the length in the longitudinal direction is shorter than 50 mm, the range of the area of main sheet body 2 which can be inserted between the labia becomes small thereby reducing the contact area between the labia and the main sheet body 2. Thereby, there generates a risk of the interlabial pad 1 being fallen off.

The length of the sub-sheet body 6 in the lateral direction on the appearance is preferable to be 10 to 60 mm, and more preferable to be 30 to 40 mm. When the length in the lateral direction is longer than 60 mm, the end of the substantial flat area 4 is rubbed against the femoral region of the wearer thereby generating friction. The generated friction exceeds the holding strength of the both labia so that the interlabial pad 1 may fall off. Also, when the length of the sub-sheet body 6 in the lateral direction is shorter than 10 mm, it becomes shorter on the appearance than the maximum value of the length of the unbonded part, which is not inserted between the labia, in the main sheet body 2 in the lateral direction. As a result, the range of the substantial flat area 4 in the lateral direction functioning to absorb blood which cannot be completely absorbed in the long convex area 3 of the main sheet body 2 becomes insufficient for covering the pudenda.

The above-described "appearance" means the distance between two points with the shortest length. This is to carefully define the length since, in the manufacturing step, there may be a case where the distance" between the two points in a concave and convex shape (that is, the distance between the two points in the state in which the concave and convex shape are unfolded to be flat) is taken as the actual "length".

On the other hand, the length of the sub-sheet body 6 in the longitudinal direction is preferable to be 60 to 160 mm, and more preferable to be 90 to 130 mm. When the length of the sub-sheet body 6 in the longitudinal direction is longer than 160 mm, friction may be easily generated since the sub-sheet body 6 keeping a plan shape is rubbed against the napkin or the underwear, and the generated friction exceeds the holding strength of the labia itself so that the interlabial pad 1 may easily fall off. Also, when the length of the sub-sheet body 6 in the longitudinal direction is shorter than 60 mm, it becomes shorter than the length of the main sheet body 2 in the longitudinal direction. Therefore, it becomes difficult to absorb blood leaked from the main sheet body 2 in the longitudinal direction so that blood outflow from the longitudinal direction likely to occur.

By providing each sheet body in the length within the range as described, the interlabial pad 1 having an excellent prevention effect of blood leak with an excellent wear feeling can be achieved.

[Finger Insertion Opening]

Next, the finger insertion opening 19A, the hollow part 5 continued therefrom, the finger insertion opening 19B and the hollow part 7 continued therefrom provided in the interlabial pad 1 according to the embodiment will be described. Fig. 11 is an explanatory illustration for describing the manner in which the forefinger is put in and out from the first finger insertion opening 19A to the hollow part 5 when using the interlabial pad 1 according to the embodiment. Fig. 12 is an explanatory illustration for describing the manner in which the forefinger is put in and out from the second finger insertion opening 19B to the hollow part 7 when using the interlabial pad 1 according to the embodiment. Figs. 13(A)-(B) show an explanatory illustration for describing that the first finger insertion opening 19A and the second finger insertion opening 19B face the same direction.

In the interlabial pad 1 according to the embodiment, the first finger insertion opening 19A is formed inside the long convex area 3 provided by bending the main sheet body 2, and the second finger insertion opening 19B is formed inside between the mini sheet piece 14, which is attached on the opposite side surface to the sub-sheet body 6, and the sub-sheet body 6. Thereby, the wearer can select either the first finger insertion opening 19A or the second finger insertion opening 19B in accordance with her labia depth. In other words, if the wearer has shallow labia depth, the finger can be inserted from the first finger insertion opening 19A to the hollow part 5 continued therefrom. On the contrary, if the wearer has deep labia depth, the finger can be inserted from the second finger insertion opening 19B to the hollow part 7 continued therefrom.

Specifically, the wearer with shallow labia depth, as shown in Fig. 11, inserts the finger from the first finger insertion opening 19A to the hollow part 5 having its fingerprint side face being in contact with the opposite side surface to body 12a of the back side sheet 12 in the main sheet body 2. In this case, the hollow part 5 becomes smaller in a substantially continuous manner. Therefore, the finger is to be inserted from the sleeve portion 5a with a large lateral cross sectional area to the sleeve portion 5b with small area. Also, the wearer with deep labia depth, as shown in Fig. 12, inserts the finger from the second finger insertion opening 19B to the hollow part 7 having its fingerprint side face being in contact with the opposite side surface to body 62a of the back side sheet 62 in the sub-sheet body 6.

As described, according to the present invention, when wearing the interlabial pad 1 between the labia, the ostium vagina with a concaved shape can be detected by the finger cushion of finger with a keen sense through the main sheet body 2 or both of the main sheet body 2 and the sub-sheet body 6. Thereby, the interlabial pad 1 can be led so that the long convex area 3 is inserted between the labia.

When wearing the interlabial pad 1 according to the embodiment, first, the forefinger or middle finger is inserted to the finger insertion opening to hold the product thereby. However, there are two finger insertion openings so that the wearer selects either one in accordance with her own labia depth. In the embodiment, the finger insertion opening 19A and the finger insertion opening 19B are positioned to face in the same direction so that there is no need for the wearer to turn over the whole body of the interlabial pad 1 when selecting either the finger insertion opening 19A or the finger insertion opening 19B. When the finger is inserted to the finger insertion opening 19A, as shown in Fig. 13(A), the finger is to be inserted between the main sheet body 2 and the sub-sheet body 6 and, when the finger is inserted to the finger insertion opening 19B, the finger is to be inserted between the sub-sheet body 6 and the mini sheet piece 14. Thereby, the interlabial pad 1 is fixed to the fingertip. Incidentally, when wrapping the interlabial pad 1 according to the present invention individually, by positioning the finger insertion opening 19A and the finger insertion opening 19B near the opening section, wearers with any types of the labia depth can easily insert their fingers.

As described, by inserting the finger to the finger insertion opening 19A or 19B, the fingerprint side surface of a finger from the first joint up, where many receptors exist, comes to be in contact with the opposite side surface to the body 12a of the back side sheet 12. Therefore, when leading the interlabial pad 1 to the labia, as shown in Fig. 14, the opposite side surface to the body 11a of the surface side sheet 11 in the main sheet body 2 is provided to be in contact with labia 18 and, while detecting the concave and convex of the labia 18 by the fingertip with a keen sense, the long convex area 3 formed on the body side surface of the interlabial pad 1 can be surely lead deep into between the labia 18 which is hard to be viewed.

Inside of the mini sheet piece 14 forming the hollow part 7 which is the gap in the second finger insertion opening is not pasted to the back side sheet 62. Therefore, when

the finger is pulled out from the finger insertion opening 19A after wearing the interlabial pad 1, as shown in Fig. 15, the mini sheet piece 14 is loosened in the opposite direction to the body side. Hence, when removing the used interlabial pad 1, the loosened mini sheet piece 14 can be pulled out as shown in Fig. 16. Furthermore, by providing the mini sheet piece 14 using an impermeable or wet permeable material, the interlabial pad 1 can be removed without contaminating the finger even if the wearer grabs the mini sheet piece 14.

By providing microscopic concaves and convexes in the area in the to be in contact with the finger cushion in the back side sheet 12 of the main sheet body 2 and the sub-sheet body 6, the area can be reduced where the finger cushion side of the fingertip comes to be in contact with the opposite side surface to the body 12a of the back side sheet 12 and the opposite side surface to the body 62a of the back side sheet 62. As a result, it makes possible to suppress friction and stuck generated between the fingertip and the interlabial pad 1. In this case, there is no chance for the interlabial pad 1 to be fitted in the position which is not the intention of the wearer, which may otherwise occur due to the influence of the state of the fingertip of the wearer, such as the wet environment. Also, the finger can be smoothly pulled out after wearing so that the position shift after wearing can be prevented.

[Wearing State]

Next, the wearing state of the interlabial pad 1 according to the embodiment will be described. Figs. 17(A)-(B) show a cross section of the wearing state of an interlabial pad with a ready-made projection 21. Fig. 18 and Fig. 19 are cross sections showing the wearing state of the interlabial pad according to the embodiment.

When wearing the interlabial pad 1 with the ready-made projection 21, if the height of the projection 21 and the depth of the labia 18 are not consistent with each other, there tends to be a gap generated between the labia 18 and the interlabial pad I, which causes a bad wear feeling. In other words, as shown in Fig. 17(A), when the depth of the labia 18 is shorter than the height of the projection 21, the bottom portion of the projection 21 which is not inserted between the labia 18 separates the labia 18 and the part other than the projection 21, which is a flat part 22, thereby generating a gap therebetween. On the other hand, as shown in Fig. 17(B), when the depth of the labia 18

the interlabial pad 1 and the inner thigh of the wearer can be improved.

[Application of Adhesive]

In order to decrease a risk of fall-off of the interlabial pad 1, by applying an adhesive beforehand on a part of the surface side sheet 11 of the main sheet body 2 and/or the surface side sheet 61 of the sub-sheet body 6, the fixing and the adhesion of the interlabial pad 1 between the labia can be improved. Thereby, generation of a gap between the body and the interlabial pad due to the body action of the wearer can be prevented.

As the adhesive agent as described, a gel adhesive, etc. made of water-soluble polymer, a crosslinking agent, a flexibilizer and moisture can be used. Examples of the water soluble polymer used herein is gelatin, polyacrylic acid sodium, polyvinyl alcohol, and carboxymethyl cellulose, etc. Examples of the crosslinking agent are water soluble metallic salt such as calcium chloride and magnesium sulfate and examples of the flexibilizer are glycerol, wax, paraffin, etc.

As other adhesive agent, so-called a pressure sensitive hot melt can be also used. Incidentally, the pressure sensitive hot melt is mainly formed of synthetic rubber resin such as styrene-isoprene-styrene block copolymer (SIS), styrene-butadiene-styrene block copolymer (SBS), styrene-ethylene-butadiene-styrene block copolymer (SEBS), and styrene-ethylene-propylene-styrene block copolymer (SEPS). The pressure sensitive hot melt adhesive can be obtained by fused-mixing adhesive adder such as terpene resin or rosin resin and a flexibilizer such as wax, etc. to the pressure sensitive hot melt. Also, silicone adhesive agent can be used as other adhesive. An example of the silicone adhesive is a mixture obtained by mixing a crosslinking agent such as metallic salt of platinum, molybdenum, or antimony and a flexibilizer such as ester wax, glycerin, or machine oil, etc.

If the application stability is taken into consideration, the pressure sensitive hot melt is preferable. More specifically, it is an adhesive agent prepared by fused-mixing 15 to 25 weight % of SEBS, 15 to 35 weight % of flexibilizer, and 40 to 70 weight % of adhesive adder. Also, according to circumstances, it is possible to add antioxidant, antifuorescent or the like within the range of 0.1 to 1.0 weight % to the pressure sensitive hot melt.

It is preferable to cover the part where the adhesive is applied with a sheet which is obtained by coating silicon resin on a tissue paper, which is a generally obtainable separate paper, or a sheet obtained by coating silicon resin on a film. Thereby, damages or separation of the adhesive part can be prevented while being stored.

Examples of the manner in which the adhesive is applied are in the form of whole surface application or in dots, mesh, or lines. The application position of the adhesive agent is not specifically limited as long as it enables fixing of the pad to the body. However, specifically considering the existence of the hair-grown part in the area in front of the labia, it is preferable to apply the adhesive near both end sides of the inter labia pad 1 in lines with about 1 to 5 mm width.

An example of valuation method of the adhesive strength will be described in detail. The valuation method is to measure the separation force (Fig. 20) and the shearing force of the adhesive (Fig. 21). A constant speed expansion tensile tester and a stainless plate of 80 mm.times.50 mm is required as the instruments used therein. As a preparation for the evaluation test, a test piece of a polyethylene film 36 in which an adhesive 37 is applied within the range of 25 mm in width and 50 mm in length is left for 30 minutes at a room temperature of 20.degree. C. beforehand. Subsequently, the polyethylene film 36 is put lightly over a stainless plate 35 with the width being overlapped and the adhesive 37 being in contact with the stainless plate 35, and a 2 kg-roller is applied one way. Then, it is left for 30 minutes at a room temperature of 20.degree. C.

The test sheet obtained as described is used, and the test condition is provided to be 70 mm chuck interval (grip interval) and 100 mm/min testing speed. In the separation force test of the adhesive, it is separated in the pulling direction B in Fig. 20 and, in the shearing force test of the adhesive, it is pulled in the pulling direction C in Fig. 21.

In the case where the forces are measured by the measurement method described above, considering the burden imposed on the skin of the wearer, it is preferable that the measurement value of the separation force to be 100 to 2000 mN/25 mm and that of the shearing force to be 2900 to 15000 mN/25 mm.

[Individual Wrapping]

When individually wrapping the interlabial pad 1 according to the present invention, it is preferable to prepare the pad so that a finger can be inserted to the finger

insertion opening 19A or finger insertion opening 19B right after opening the wrapping container. For example, the pad may be wrapped anisotropic to the wrapping container so that the opening direction and the fingertip insertion direction become the same, or the mini sheet piece 14 for finger insertion can be positioned to be near the opening section of the wrapping container.

It is also preferable to wrap the interlabial pad 1 by folding it in such manner that the finger insertion opening 19A and the finger insertion opening 19B are naturally opened when opening the wrapping container. Thereby, the wearer can easily recognize the position of finger insertion. As a result, the interlabial pad 1 can be fitted more quickly and easily.

When folding the interlabial pad 1, for example, as shown in Fig. 22A, after tearing the opening section 41, the wearer with shallower labia depth can easily insert the finger by folding it with the finger insertion opening 19A being the top face and, as shown in Fig. 22B, the wearer with the deeper labia depth can easily insert the finger by folding it with the finger insertion opening 19B being the top face.

Furthermore, by specifying the breaking direction of the opening section in accordance with the labia depth through providing a character or the like in the wrapping container 40, it can be also made easier for the wearer to insert the finger to the finger insertion opening suitable for her own labia depth. For example, the interlabial pad 1 is wrapped in the wrapping container 40 with the finger insertion opening 19A positioned near the opening section where a character meaning "shallow" is put, and the finger insertion opening 19B positioned near the opening section where a character meaning "deep" is put. Thereby, the wearer with the shallow labia depth can insert the finger easily from the finger insertion 19A by opening the wrapping container 40 from the opening section where a character meaning "shallow" is put as shown in Fig. 23A. Then, the wearer with the deep labia depth can insert the finger easily from the finger insertion 19B by opening the wrapping container from the opening section where a character meaning "deep" is put as shown in Fig. 23B.

[Other Applicable Embodiment of the Interlabial Pad]

The interlabial pad 1 according to the embodiment, as shown in Fig. 24, can be used together with an ordinal sanitary napkin 30. As for the wearing method, the

interlabial pad 1 is fitted in between the labia and the sanitary napkin 30 is fitted to the underwear. By using it together with a sanitary napkin as described, the interlabial pad 1 of the present invention can be effectively used even on a occasion expecting a large quantity of blood.

Industrial Applicability

According to the present invention as described, a finger can be inserted to a finger insertion opening provided in an interlabial pad having a long convex area on the body side face. Thereby, the interlabial pad can be fixed and held by the fingertip so that the interlabial pad can be fitted in the appropriate position even in between labia where it is hard to be viewed.

Also, the above-described finger insertion opening is provided in two areas so that the wearer can select either one according to her own labia depth. In addition, the above-described long convex area are flexibly deformed in accordance with the labia depth of the wearer thereby enabling a close wearing of the interlabial pad in between the labia regardless of the labia depth of the wearer. As a result, leak of blood can be drastically decreased.